

ABSTRACT

Title: Results of the Simulation and Assimilation of Doppler Wind Lidar Observations in
Preparation for European Space Agency's Aeolus Mission

Will McCarty
NASA, Goddard Space Flight Center (GSFC)
Global Modeling and Assimilation Office (GMAO) 610.1
Greenbelt, Md. 20771

With the launch of the European Space Agency's Aeolus Mission in 2013, direct spaceborne measurements of vertical wind profiles are imminent via Doppler wind lidar technology. Part of the preparedness for such missions is the development of the proper data assimilation methodology for handling such observations. Since no heritage measurements exist in space, the Joint Observing System Simulation Experiment (Joint OSSE) framework has been utilized to generate a realistic proxy dataset as a precursor to flight. These data are being used for the development of the Gridpoint Statistical Interpolation (GSI) data assimilation system utilized at a number of centers through the United States including the Global Modeling and Assimilation Office (GMAO) at NASA/Goddard Space Flight Center and at the National Centers for Environmental Prediction (NOAA/NWS/NCEP) as an activity through the Joint Center for Satellite Data Assimilation. An update of this ongoing effort will be presented, including the methodology of proxy data generation, the limitations of the proxy data, the handling of line-of-sight wind measurements within the GSI, and the impact on both analyses and forecasts with the addition of the new data type.